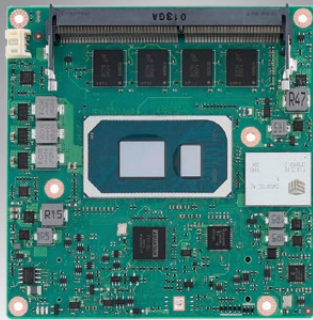


# SOM-6883

## 11<sup>th</sup> Gen. Intel® Core™ Processor U-Series (Code Name: Tiger Lake-UP3) COM Express® Compact Type6

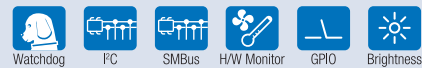
**NEW**



### Features

- 11<sup>th</sup> Gen. Intel® Core™ Processor U-Series
- COM Express R3.0 Compact Module Type 6 Pinout
- Dual channel with one memory down and one SO-DIMM
- High speed I/O: 1 PCIe x4 Gen4, 5 PCIe x1 Gen3, 4 USB3.2 Gen2
- Onboard NVMe x4 SSD up to 64GB, TPM2.0
- Supports SUSI, DeviceOn and Edge AI Suite

Software APIs:

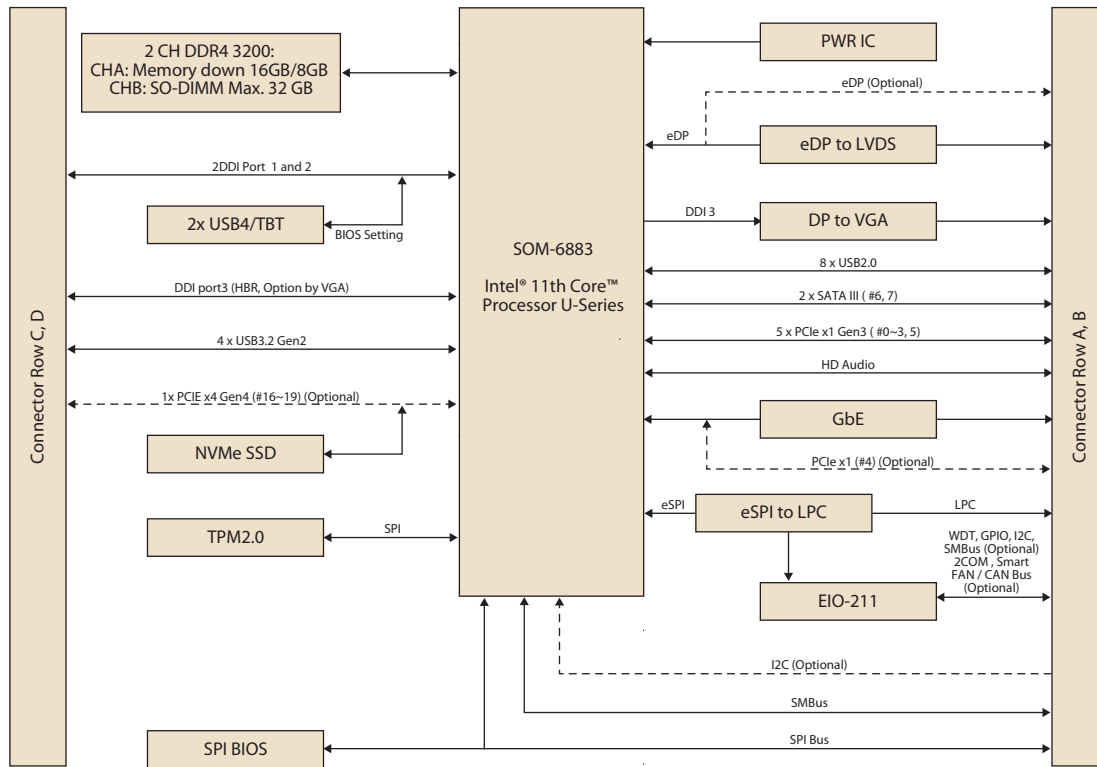


  **iManager WISE-DeviceOn**  

### Specifications

|                  |                                 |   |                  |                  |                |                  |                  |                  |
|------------------|---------------------------------|---|------------------|------------------|----------------|------------------|------------------|------------------|
| Form Factor      | Form Factor                     | COM Express Compact Module  |                  |                  |                |                  |                  |                  |
|                  | Pin-out Type                    | COM Express R3.0 Type 6 compatible  |                  |                  |                |                  |                  |                  |
| Processor System | CPU                             | Core™ i7-1185G7E  | Core™ i5-1145G7E | Core™ i3-1115G4E | Celeron® 6305E | Core™ i7-1185GRE | Core™ i5-1145GRE | Core™ i3-1115GRE |
|                  | Base Frequency                  | 1.8GHz  | 1.5GHz           | 2.2GHz           | 1.8GHz         | 1.8GHz           | 1.5GHz           | 2.2GHz           |
|                  | Turbo Frequency                 | 4.4GHz  | 4.1GHz           | 3.9GHz           | N/A            | 4.4GHz           | 4.1GHz           | 3.9GHz           |
|                  | Cores                           | 4   | 4                | 2                | 2              | 4                | 4                | 2                |
|                  | Cache                           | 12 MB   | 8 MB             | 6 MB             | 4 MB           | 12 MB            | 8 MB             | 6 MB             |
|                  | CPU TDP                         | 15W   | 15W              | 15W              | 15W            | 15W              | 15W              | 15W              |
|                  | Configurable TDP-up Frequency   | 28W   | 28W              | 28W              | N/A            | 28W              | 28W              | 28W              |
|                  | Configurable TDP-down Frequency | 12W   | 12W              | 12W              | N/A            | 12W              | 12W              | 12W              |
| Memory           | Technology                      | DDR4, Dual-channel memory, up to 3200 MT/s  |                  |                  |                |                  |                  |                  |
|                  | ECC Support                     | IB ECC supported by Industrial SKU  |                  |                  |                |                  |                  |                  |
|                  | Onboard Memory                  | 16GB/8GB  |                  |                  |                |                  |                  |                  |
|                  | SODIMM Memory                   | up to 32 GB by one SODIMM Socket  |                  |                  |                |                  |                  |                  |
| Graphics         | Controller                      | Intel® Iris® Xe Graphics/Intel® UHD Graphics  |                  |                  |                |                  |                  |                  |
|                  | Graphics Max Dynamic Frequency  | 1.35GHz   | 1.30GHz          | 1.25GHz          | 1.25GHz        | 1.35GHz          | 1.30GHz          | 1.25GHz          |
|                  | 2D&3D/HW Acceleration           | HW Encode: Supports AVC, MPEG-2, HEVC, and VP9.<br>HW Decode: Supports Direct3D® 9 Video API (DXVA2), Direct3D12 Video API, Intel Media SDK, MFT (Media Foundation Transform) filters, Intel VA API |                  |                  |                |                  |                  |                  |
| Display          | VGA                             | 1920 x 1200@60Hz  |                  |                  |                |                  |                  |                  |
|                  | LCD                             | LVDS dual channel: 1920 x 1200@60Hz (option support eDP 4096 x 2304@60Hz, 24bpp)  |                  |                  |                |                  |                  |                  |
|                  | DDI                             | 3 DDI ports support configurable HDMI/DisplayPort<br>-HDMI 2.0b: 4Kx2K 48-60Hz 24bpp<br>-DisplayPort 1.4: 4096x2304 60Hz 36bpp  |                  |                  |                |                  |                  |                  |
|                  | Multiple Display                | Four displays with each display combinations  |                  |                  |                |                  |                  |                  |
| Expansion        | PCI Express x1 (Gen3)           | 5 PCIe x1 (Up to 6 by option)   |                  |                  |                |                  |                  |                  |
| Serial Bus       | SMBus                           | Yes   |                  |                  |                |                  |                  |                  |
|                  | I2C Bus                         | Yes   |                  |                  |                |                  |                  |                  |
| Ethernet         | Gigabit                         | Intel I225 IT controller ; Speed: 10M / 100M / 1000M / 2.5G speeds  |                  |                  |                |                  |                  |                  |
| I/O              | SATA3.0                         | 2 Ports (6Gbps)   |                  |                  |                |                  |                  |                  |
|                  | USB3.2 (Gen2)                   | 4 Ports (10 Gbps)   |                  |                  |                |                  |                  |                  |
|                  | USB2.0                          | 8 Ports (480 Mbps)  |                  |                  |                |                  |                  |                  |
|                  | LPC                             | Yes   |                  |                  |                |                  |                  |                  |
|                  | SPI Bus                         | Yes   |                  |                  |                |                  |                  |                  |
|                  | GPIO                            | 8-bit GPIO  |                  |                  |                |                  |                  |                  |
|                  | Watchdog                        | 65536 level, 0 ~ 65535 sec  |                  |                  |                |                  |                  |                  |
|                  | CAN Bus                         | Support one CAN Bus option from COM Port  |                  |                  |                |                  |                  |                  |
|                  | COM Port                        | 2 Ports (2-Wire)  |                  |                  |                |                  |                  |                  |
|                  | TPM                             | TPM2.0  |                  |                  |                |                  |                  |                  |
|                  | Smart Fan                       | 2 Ports: 1 port on COM module (Notice: the input voltage of fan is aligned to Vin); 1 port on carrier board   |                  |                  |                |                  |                  |                  |
| Power            | Type                            | ATX: Vin, VSB; AT: Vin  |                  |                  |                |                  |                  |                  |
|                  | Supply Voltage                  | Vin: 8.5V ~ 20V; VSB: 4.75V ~ 5.25 V, RTC Battery: 2.0V ~ 3.3V  |                  |                  |                |                  |                  |                  |
| Environment      | Operating Temperature           | Standard: 0 ~ 60 °C (32 ~ 140 °F)<br>Extend: -40 ~ 85 °C (-40 ~ 185 °F)   |                  |                  |                |                  |                  |                  |
|                  | Storage Temperature             | -40 ~ 85 °C (-40 ~ 185 °F)  |                  |                  |                |                  |                  |                  |
|                  | Humidity                        | Operating: 40 °C @ 95% relative humidity, non-condensing<br>Storage: 60 °C @ 95% relative humidity, non-condensing  |                  |                  |                |                  |                  |                  |
|                  | Vibration Resistance            | 3.5 Grms  |                  |                  |                |                  |                  |                  |
| Mechanical       | Dimensions                      | 95 x 95 mm (3.74" x 3.74")  |                  |                  |                |                  |                  |                  |

## Block Diagram



## Ordering Information

| P/N              | CPU              | Cores | CPU TDP | Onboard Memory | Onboard NVMe | PCIe x4 GEN4 | eDP/LVDS | IBECC Supported | USB4    | Power  | Thermal Solution | Operating Temperature |
|------------------|------------------|-------|---------|----------------|--------------|--------------|----------|-----------------|---------|--------|------------------|-----------------------|
| SOM-6883C7A-S8A1 | Core™ i7-1185G7E | 4     | 15W     | 16GB           | 32GB         | N/A          | LVDS     | N/A             | N/A     | AT/ATX | Active           | 0 ~ 60 °C             |
| SOM-6883C7-S8A1  | Core™ i7-1185G7E | 4     | 15W     | 16GB           | N/A          | Yes          | LVDS     | N/A             | N/A     | AT/ATX | Active           | 0 ~ 60 °C             |
| SOM-6883C5-S5A1  | Core™ i5-1145G7E | 4     | 15W     | 8GB            | N/A          | Yes          | LVDS     | N/A             | N/A     | AT/ATX | Active           | 0 ~ 60 °C             |
| SOM-6883C5A-S5A1 | Core™ i5-1145G7E | 4     | 15W     | 8GB            | N/A          | Yes          | eDP      | N/A             | N/A     | AT/ATX | Active           | 0 ~ 60 °C             |
| SOM-6883C3-U2A1  | Core™ i3-1115G4E | 2     | 15W     | N/A            | N/A          | Yes          | LVDS     | N/A             | N/A     | AT/ATX | Active           | 0 ~ 60 °C             |
| SOM-6883CR-S8A1  | Celeron® 6305E   | 2     | 15W     | N/A            | N/A          | Yes          | LVDS     | N/A             | N/A     | AT/ATX | Active           | 0 ~ 60 °C             |
| SOM-6883R7X-S8A1 | Core™ i7-1185GRE | 4     | 15W     | 16GB           | 32GB         | N/A          | LVDS     | Yes             | N/A     | AT/ATX | Active           | -40 ~ 85 °C           |
| SOM-6883R5X-S5A1 | Core™ i5-1145GRE | 4     | 15W     | 8GB            | N/A          | Yes          | LVDS     | Yes             | N/A     | AT/ATX | Active           | -40 ~ 85 °C           |
| SOM-6883R3X-U2A1 | Core™ i3-1115GRE | 2     | 15W     | NA             | N/A          | Yes          | LVDS     | Yes             | N/A     | AT/ATX | Active           | -40 ~ 85 °C           |
| SOM-6883C3B-U2A1 | Core™ i3-1115G4E | 2     | 15W     | N/A            | N/A          | N/A          | LVDS     | N/A             | Option* | AT/ATX | Active           | 0 ~ 60 °C             |

\*SOM-MZ10 is not included in SOM-6883C3B-U2A1, need to be purchased from optional accessories

\*Any other sku or combination is project based support. Please contact sales for details.

## Development Board

| Part No.         | Description  |
|------------------|--|
| SOM-DB5830-00A2  | COMe Devel. Board COMe R3.0 Type6 pin-out (LVDS) 0 ~ 60 °C   |
| SOM-DB5830A-00A2 | COMe Devel. Board COMe R3.0 Type6 pin-out (eDP) 0 ~ 60 °C    |
| SOM-DB5830X-00A2 | COMe Devel. Board COMe R3.0 Type6 pin-out (LVDS) -40 ~ 85 °C |

## Optional Accessories

| Part No.       | Description                              |
|----------------|--|
| 1970004870T001 | Semi-Cooler 95 x 95 x 33 mm with 12V Fan |
| 1970004871T001 | QFCS 95 x 95 x 26 mm                     |
| SOM-MZ10-00A1  | SOM-MZ10 USB4 card                       |

## Packing List

| Part No.       | Description              | Quantity |
|----------------|--------------------------|----------|
| 1970004766T001 | Heatspreader of SOM-6883 | 1        |

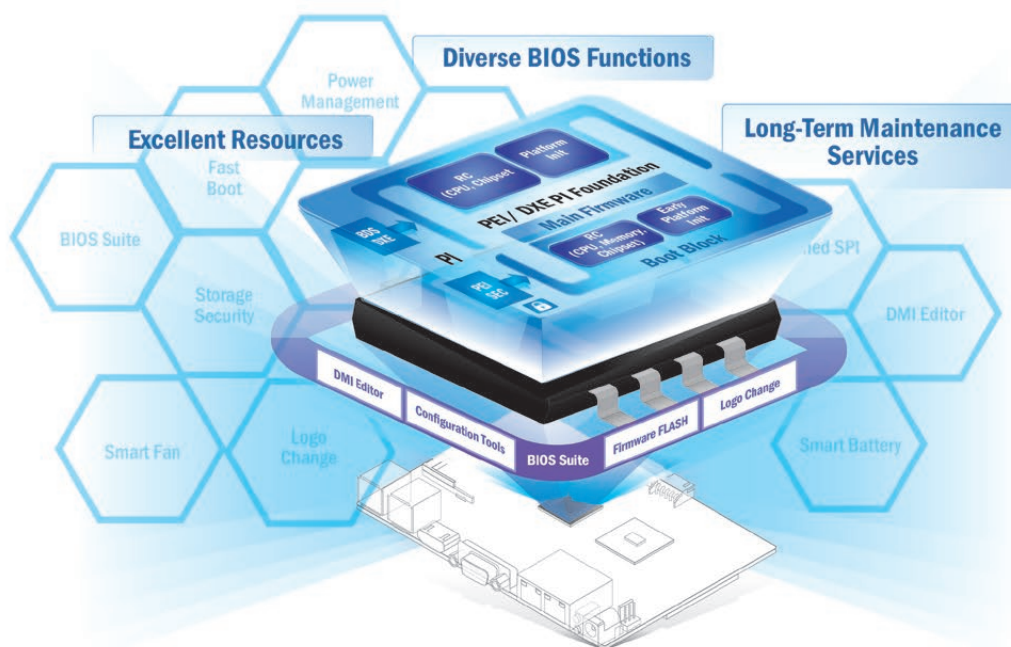
## Embedded OS

| OS    | Part No.       | Description                                   |
|-------|----------------|---|
| Win10 | 20706WX9HM0018 | img W10 19HL SOM-6883 64b 1809 ENU (Audio_NV) |

# Reliable Embedded BIOS Solutions

Custom BIOS services with long-term support

Advantech's high-quality embedded BIOS solutions deliver rapid execution and feature expert BIOS team support. These solutions feature multi-functional designs that ensure security and enable power/boot management. Advantech further provides 10+ years of BIOS version management, internal management, and longevity support for both hardware and BIOS — enhancing application efficiency, diversifying functionality, and optimizing performance.



## Embedded BIOS Solution Advantages

### Sufficient Sources

- Strong partnership with BIOS vendors
- 50+ engineers with extensive industrial BIOS experience

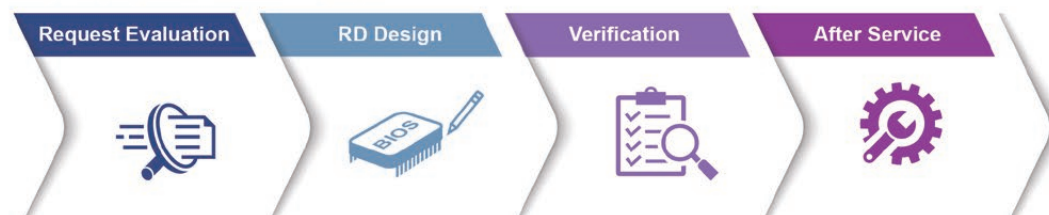
### Diverse BIOS Functions

- Multi-layer security
- 3 second fast boot
- Power management
- BIOS suite utility

### Long-Term Maintenance Services

- Platform longevity support
- 10-year BIOS version control
- BIOS remote backup

## Value-Added Customization Process



# WISE-DeviceOn

## Massive IoT Device Management Utility

IoT deployment and management typically involves numerous disparate devices installed on multiple sites. These devices require effective monitoring, managing, and tracking. Advantech's easy-to-use WISE-DeviceOn interface enables users to remotely monitor device health, troubleshoot problems, and send software/firmware updates over-the-air (OTA). In sum, DeviceOn empowers quick real-time responsiveness to emerging problems.



### Features

| Comprehensive Management   | Remote Access  | Efficient Operations   |
|--|--|--|
| <ul style="list-style-type: none"> <li>• Devices status</li> <li>• Peripherals/firmware</li> <li>• Open for extension</li> </ul> | <ul style="list-style-type: none"> <li>• Real-time monitoring</li> <li>• Remote controls</li> <li>• Troubleshooting</li> </ul> | <ul style="list-style-type: none"> <li>• Zero-touch on-boarding</li> <li>• OTA updates</li> <li>• Batch control</li> </ul> |

### Product Highlights



**SOM-6883**

High-performance 11<sup>th</sup> Gen Intel<sup>®</sup> COMe Type 6 Module



**MIO-5375**

Compact 11<sup>th</sup> Gen Intel<sup>®</sup> Outdoor Focused 3.5" SBC



**EPC-B5587**

10<sup>th</sup> Gen Intel<sup>®</sup> Xeon<sup>®</sup> based Edge server



**EPC-R3220**

Arm based IoT Edge Gateway

# Edge AI Suite

AI development for diverse application at the Edge

Increasing demand for AI inference/analytic capabilities at the Edge make AI training models, software development environments, and hardware configuration key factors in successful solution deployment. Advantech's Edge AI Suite helps users build AI demo devices quickly and choose optimal hardware solutions easily.



| 5x Performance Boost  | All-in-one Installation   | One Click AI Experience   | Plug-and-play Environment   | Discover Cost-effective Hardware  |
|---|---|---|---|---|
| <ul style="list-style-type: none"> <li>Integrated Intel® OpenVINO™ technology</li> <li>Boost AI using Advantech hardware</li> </ul> | <ul style="list-style-type: none"> <li>Build AI environment in under 5 minutes</li> <li>Ready-to-use configuration</li> </ul> | <ul style="list-style-type: none"> <li>User friendly configuration guidance</li> <li>One-click Benchmark acquisition</li> </ul> | <ul style="list-style-type: none"> <li>Easy access to 100+ AI inference extensions</li> <li>Software development package available</li> </ul> | <ul style="list-style-type: none"> <li>Diverse CPU/RAM options</li> <li>Find hardware solutions for AI development</li> </ul> |

# Embedded Linux Support and Design-in Services

## Hardware Certified Ubuntu and Yocto with Eco Partner Services

Linux is the most popular embedded OS for transportation, outdoor services, factory automation, and mission critical applications. Its open source and kernel reliability features ease security updates, and make it particularly adaptable to new AI and Edge computing technology. Advantech has cooperated with Canonical and other software partners to provide hardware certified Ubuntu image and Yocto BSP as Linux offerings. The Advantech, Embedded Linux, and Android Alliance (ELAA) delivers local software services and consultation.



### Features

| Certified OS and BSP  | Licensed Services  | Numerous AI and Edge Resources  | Local Partner Alliance   |
|---|--|---|--|
| <ul style="list-style-type: none"> <li>Platform compatibility tests</li> <li>Preloaded functional driver and software stacks</li> </ul> | <ul style="list-style-type: none"> <li>License authorized Canonical delivers 10-years of bug fixes and security updates</li> <li>In-house bundled service</li> </ul> | <ul style="list-style-type: none"> <li>Containerized technology for service provision and deployment</li> <li>AI resources from Caffe, TensorFlow, and mxnet</li> </ul> | <ul style="list-style-type: none"> <li>Embedded Linux and Android Alliance (ELAA)</li> </ul> |